

1 WHAT IS CLAIMED IS

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1. A liquid crystal display device,  
comprising:

a first substrate;

10 a second substrate facing said first  
substrate;

a liquid crystal layer interposed between  
said first and second substrates; and

15 a group of electrodes disposed on said first  
substrate so as to create an electric field in said  
liquid crystal layer generally parallel to said first  
substrate in an activated state in which a drive  
voltage is applied to said group of electrodes;

20 said liquid crystal molecules aligning  
generally perpendicularly to a plane of said first  
substrate in a non-activated state in which said drive  
voltage is not applied to said group of electrodes,  
said liquid crystal molecules aligning generally  
parallel to said plane of said first substrate in said  
activated state;

25 said liquid crystal molecules having a pre-  
tilt angle of less than 90° in at least one of a part  
of said liquid crystal layer corresponding to a pixel  
and said electrode on said first substrate.

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35 2. A liquid crystal display device as  
claimed in claim 1, wherein said electrodes include a  
first electrode provided on a surface of said first  
substrate facing said second substrate and a second  
electrode provided on said surface with a separation

1 from said first electrode, and wherein said liquid  
crystal display device further includes a first  
projection provided on said first electrode and a  
second projection provided on said second electrode,  
5 said first and second projections inducing said pre-  
tilt angle in said liquid crystal molecules locating  
adjacent to said first and second projections.

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3. A liquid crystal display device as  
claimed in claim 2, further including a third  
projection on a surface of said second substrate  
15 facing said first substrate.

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4. A liquid crystal display device,  
comprising:

a first substrate;

a second substrate facing said first  
substrate;

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a liquid crystal layer interposed between  
said first and second substrates; and

a group of electrodes disposed on said first  
substrate so as to create an electric field in said  
liquid crystal layer generally parallel to said first  
30 substrate in an activated state in which a drive  
voltage is applied to said group of electrodes;

said liquid crystal molecules aligning  
generally perpendicularly to a plane of said first  
substrate in a non-activated state in which said drive  
35 voltage is not applied to said group of electrodes,  
said liquid crystal molecules aligning generally  
parallel to said plane of said first substrate in said

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- 1 activated state;  
said liquid crystal layer having a  
birefringence large r than about 0.10 but smaller than  
about 0.25.

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5. A liquid crystal display device as  
10 claimed in claim 4, wherein said liquid crystal layer  
contains a tolan-family component.

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